that an Indo-Canadian engineer has invented a solar energy device which could help to provide inexpensive power to energy starved villages; and

(b) if so, whether Government have taken any action in this regard; and the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (CAPT. JAI NARAIN PRASAD NISHAD): (a) and (b) Yes, Sir. Prof. Anand Sharan of the Memorial University, New Foundland, Canada has developed a tracking system for use in solar photovoltaic power systems. The system can be used to move solar panels during the day so that they face the sun continuously. He has claimed that this enhances the energy output from the solar panels by about 35—40%. Such tracking systems use motors and electronic circuits and consume a part of the power generated from the solar panels.

At present simple manual tracking systems which consume no energy are already in use in India especially in solar photovoltaic (PV) water pumping systems. These tracking systems are capable of generating about 25—30% extra power compared to the fixed type solar panels. In general tracking systems are not considered very useful for small capacity PV lighting systems normally in use in rural areas.

Potential of Non-Conventional Energy Sources in M.P.

574. SHRI AJIT P.K. JOGI: Will the PRIME MINISTER be pleased to state:

(a) whether the potentials to develop non-conventional energy sources in Madhya Pradesh have been ascertained;

(b) if so, the details thereof;

(c) the year-wise allocations made for the development of various energy sources during the current Plan-period; and

(d) what is the up to date position of non-conventional energy sources in Madhya Pradesh?

THE MINISTER OF STATE OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (CAPT. JAI NARTAIN PRASAD NISHAD): (a) and (b) The estimated potentials for the installation of Improved Chulhas and Biogas plants in the State of Madhya Pradesh are 1,00,00,000 (one crore) 14,91,200 respectively. Broad potentials of other non-conventional energy sources estimated on country wide basis, are given in the enclosed Statement (*See* below).

(c) The year-wise funds released to the State of Madhya Pradesh during 1992-93 to 1996-97 for the development of various non-conventional energy sources are given in the enclosed statement-II (*See* below).

(d) The status of non-conventional energy projects and devices installed in Madhya Pradesh under various programmes of the Ministry upto December, 1996, is given in the enclosed statement III.

Statement-I

Potential of various types of New and Renewable Sources of Energy (NRSE) and technologies in India are given bel—

Source/Technology	Approx. Potential Availability
Biogas Plants	40 Million Nos.
Biomass/Bioenergy	17,000 MW

Source/Technology	Approx. Potential Availability	
Improved Chulha	120	Million Nos.
Mini-Micro Hydel Power	10,000	MW
Wind Power	20,000	MW
Ocean Thermal Power	50,000	MW
Tidal Power	9,000	MW
Sea Wave Power	20,000	MW
Total Solar Insolation over land area of India		5×10^{15} KWhr/year (Equivalent)

Statement-II

Year-wise allocation of funds for non-conventional energy programmes in Madhya Pradesh

(Rs. in lakhs)

Sl. No.	Name of Programme/ Scheme	Funds released to Madhya Pradesh				
		1992-93	1993-94	1994-95	1995-96	1996-97
1.	Biogas Plants	170.45	467.17	584.38	330.33	474.41
2.	Improved Chulha	81.12	152.63	210.97	167.30	656.50
3.	Biomass Gasifier	—	4.13	113.27	22.86	—
4.	Solar Thermal Energy	26.52	62.84	14.80	0.10	12.00
5.	Solar Photovoltiac	23.94	17.25	49.00	—	—
6.	IREP	36.41	35.70	61.93	102.16	23.32
7.	Small Hydro Project	330.55	242.18	65.12	—	—

Statement-III

Non-Conventional energy projects and devices installed in Madhya Pradesh under various programmes

Sl. No.	Name of Systems/Devices	Installed in Madhya Pradesh upto December, 1996	
1.	Biogas Plants (Nos.)	1,18,700	
2.	Improved Chulha (Nos.)	16,14,000	
3.	Solar Cooker (Nos.)	1,60,436	
4.	Solar Water Heater including other Solar Thermal Systems (m^2)	38,000	
5.	Solar Photovoltaic		
	(i) Domestic light (Nos.)	100	
	(ii) Street light (Nos.)	5427	
	(iii) Power Plants (Nos.)	2	(9 KWp)
	(iv) Solar Lanterns (Nos.)	6348	
	(v) Community Lights (Nos.)	46	
6.	Wind Power Projects (MW)	8	

Sl. No.	Name of Systems/Devices	Installed in Madhya Pradesh upto December, 1996
7.	Small Hydro Projects (MW)	3.25
8.	Biomass Power Projects (MW)	5@

@ 5 Projects are under construction.

Unit for Energy Generation from Urban & Industrial waste in the North-East

575. DR. B.B. DUTTA: Will the PRIME MINISTER be pleased to state:

(a) the steps taken by the Central Government and each of the State Governments to promote projects for generating Energy from the Urban and Industrial wastes;

(b) whether any units for collecting and processing wastes have been set up in North-Eastern States;

(c) If so, the details thereof and the present status of each project; and

(d) if not, the reasons therefor?

THE MINISTER OF STATE OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (CAPT. JAI NARAIN PRASAD NISHAD): (a) Government of India in the Ministry of Non-Conventional Energy Sources launched a "National Programme on Energy Recovery from Urban and Industrial Wastes", providing fiscal and financial incentives to promote projects for generation of Energy from Urban, Municipal and Industrial wastes. The programme covers all the States and Union Territories of India. Some State Governments e.g. U.P., A.P., M.P. and Maharashtra have announced their policy guidelines regarding allotment of land on long term lease basis, supply of garbage and purchase of power produced from the "Waste to Energy Projects" and have also taken steps for carrying out easibility studies for assessing the potential in various cities in respective States for energy recovery.

(b) No, Sir.

(c) Does not airse.

(d) The Ministry has issued guidelines to all States including the North-Eastern States for annoucning, conducive State policies for encouraging projects for generating energy from Urban and Industrial Wastes. Due to lack of appropriate policy framework at the State level with regard to allotment of land, supply of garbage and evacuation of power generated from "Waste to Energy Projects", private enterpreneurs have not shown keen interest in setting up such projects in North-Eastern States.

Schemes for Promotion of Non-Conventional Energy Sources in Maharashtra

576. SHRI SATISH PRADHAN: will the PRIME MINISTER be pleased to state:

(a) whether Government have reviewed the performance of various schemes for promotion of non-conventional energy being implemented in Maharashtra;

(b) If so, the details of targets set and achieved so far, scheme-wise, during the current year vis-a-vis performance for the corresponding period of the previous year;

(c) the details of steps taken to ensure even utilization of funds allotted under the programme in terms of implementation of scheme to harness the development potentials in a balanced manner and the guidelines issued to the State in this regard; and